

COPD Biomarkers Literature Databases

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Objectives

- To build databases on biomarkers reported in published scientific literature concerning the relationship between COPD and smoking.
- To maintain these databases with a potential update every year.

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History (1)

- These databases are built in MS Access, on the basis of a database which was set-up by the Weinberg Group for a WSA project : - Epidemiology of active smoking and COPD.
- 1500 scientific papers introduced and analysed by third-party consultant.

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History (2)

- Following this project, Matt's idea was to create some databases more specifically concerning the biomarkers of COPD and smoking.
- As a first step, articles were taken from in-house database (Documentum) and introduced together with other articles found in outside databases (e.g. PubMed).
- Other scientific papers were introduced on the basis of references cited, and on weekly smoking and health database searches (Ovid).

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7 Different Databases

- BAL / BALF (94 references)
- Biopsy (88 references)
- Blood / Serum (121 references)
- Exhaled Breath (155 references)
- Sputum (107 references)
- Urine (48 references)
- General (109 references)
- TOTAL (722 references)

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First Page of the Database

The screenshot shows a web-based database interface. At the top, there is a menu bar with four items: 'View', 'Citation Report', 'Keywords Search', and 'Add Article'. Below this is a table with four columns: 'Author', 'Title', 'Citation', and 'Comments'. The table contains several rows of data, though the text is somewhat blurry. At the bottom of the interface, there are two buttons: 'Search' and 'Clear'. In the bottom left corner, it says 'Version: 1.0'.

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Document Introduction

Author: []

Date: [] Image: []

Title: []

Citation: []

Comments: []

Affected Population | Smoking status & exposure | Chronic Bronchitis & Symptoms | Diagnosis

Other Diseases | Biomarkers | Therapeutic Interventions | Emphysema | Lung Function

Study Type | Genetic Determinants | Confounders / Co-factors

☐ Descriptive ☐ Molecular epidemiology ☐ Study design / methodology

☐ Cross-sectional ☐ Intervention ☐ Review

☐ Case control ☐ Incidence ☐ Letter / Editorial

☐ Prospective / longitudinal ☐ Prevalence

Edit Full Author List

Save Changes

Cancel

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Searching Possibilities

New Search | Citation Report | Document Search | Add Article

Author: [] Title: [] Citation: [] Comments: []

Search Clear

Version: 7.0 Log

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Searching Possibilities

Filter results by clicking on the filter button in the toolbar above.

Select one or more keywords and click the filter button in the toolbar above.

Other diseases	Biomarkers	Therapeutic interventions	Emphysema	Lung fibrosis
Affected population	Smoking status & exposure	Chronic bronchitis & symptoms	Diagnosis	
Study type	COPD	Genetic determinants	Confounders & modifiers	
<input type="checkbox"/> Cohort	<input type="checkbox"/> Molecular epidemiology	<input type="checkbox"/> Study design / methods		
<input type="checkbox"/> Case-control	<input type="checkbox"/> Intervention	<input type="checkbox"/> Review		
<input type="checkbox"/> Case-control	<input type="checkbox"/> Incidence	<input type="checkbox"/> Letter / Editorial		
<input type="checkbox"/> Prospective / longitudinal	<input type="checkbox"/> Prevalence			

Look for

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Most Often Cited Biomarkers

- BAL / BALF
 - Albumin, IL-6, IL-8, MMPs, MPO, TNF-alpha, Macrophages, Neutrophils, Lymphocytes, Eosinophils, CD4+, CD8+
- Biopsy
 - Macrophages, Neutrophils, Lymphocytes, Eosinophils, Mast Cells, Epithelial Cells, CD3+, CD4+, CD8+, IL-8, MMPs, TNF-alpha, ICAM-1

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Most Often Cited Biomarkers

- Blood / Serum
 - CC-16, CRP, Monocytes, Neutrophils, Lymphocytes, Eosinophils, Basophils, TNF-alpha, IL-6, IL-8
- Exhaled Breath
 - NO, 8-Isoprostane, Nitrite, Nitrate, LTB4, H2O2, CO, Malondialdehyde, PGF2a

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Most Often Cited Biomarkers

- Sputum
 - Macrophages, Neutrophils, Lymphocytes, Eosinophils, Epithelial Cells, IL-8, LTB4, TNF-alpha, MPO, Elastase, Albumin, CD4, CD8
- Urine
 - Desmosine, Isodesmosine, Creatinine, Neutrophil Elastase

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Future Perspectives

- To keep these databases up to date.
- To send on a regular basis (once or twice a year?) the up-dated version mentioning all new articles introduced.
- To identify individual (in-house or consultant) to analyse databases for potential use in guidance and assessment.

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Annexe

List of Predefined Keywords

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Other Predefined Keywords (1)

- COPD
 - Any
 - Stage 0: At risk
 - Stage 1: Mild COPD
 - Stage 2: Moderate COPD
 - Stage 3: Severe COPD
 - Exacerbation
- Genetic Determinants
 - Alpha-1 antitrypsin deficiency
 - PiZ phenotype
 - PiM phenotype
 - PiS phenotype
 - Other

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Other Predefined Keywords (2)

- Confounders/Co-factors
 - Age
 - Gender
 - Ethnicity
 - Atopy
 - Infections
 - Height
 - Weight
 - Nutrition
 - BMI
 - Socioeconomic status
 - Outdoor air pollution
 - Indoor air pollution
 - Alcohol consumption
 - Occupational exposures
 - Airway Hyperresponsiveness
 - Environmental tobacco smoke
 - Environmental risk factors in infancy
 - Family history of respiratory diseases
 - Other

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Other Predefined Keywords (3)

- Other Diseases
 - Asthma
 - Cancer
 - Fibrosis
 - Pulmonary tuberculosis
 - Upper respiratory
 - Cardiovascular disease
 - Other
- Biomarkers
 - Sputum
 - Blood
 - Urine
 - BAL / BALF
 - Bronchoscopy
 - Exhaled breath
 - Exhaled breath condensate

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Other Predefined Keywords (4)

- Therapeutic interventions
 - LOT
 - Ventilator
 - Experimental drugs
 - Glucocorticosteroids
 - Beta agonists / anticholinergics / theophyllines
 - Surgical (volume reduction surgery)
 - Other
- Emphysema
 - Any
 - Centrilobular
 - Panacinar

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Other Predefined Keywords (5)

- Lung function
 - Any
 - FEV1
 - FVC
 - FEV1 / FVC ratio
 - PEF
 - DLco
 - N2 Single breath test
 - Airway resistance
 - Exercise testing
 - Other
- Affected Population
 - Adults
 - Men
 - Women
 - 50 or younger
 - Over 50

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Other Predefined Keywords (6)

- Smoking status & exposure
 - Independent verification of smoking status and exposure
 - Smokers
 - Nonsmokers
 - Quitters
 - Intermittent quitters
 - Re-starters (ex-smokers at entry)
 - Cigarettes per day (CPD)
 - Pack-years
 - Filter / non-filter cigarettes
 - Inhalation
 - Dose increase
 - Dose decrease
 - Cessation
 - Pipe / Cigar
 - Other

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Other Predefined Keywords (7)

- Chronic Bronchitis & Symptoms

- Any
- Cough
- Sputum production
- Chronic Bronchitis
- Chronic Bronchiolitis
- Mucus hypersecretion
- Dyspnea and breathlessness
- Wheezing and chest tightness

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Other Predefined Keywords (8)

- Diagnosis

- | | |
|------------------|-------------------------|
| – GP | – Blood gases |
| – Hospital | – Pulmonary specialist |
| – BAL / BALF | – Hyperpolarized Helium |
| – X-ray | – Bronchodilator |
| – CT / HRCT | – reversibility testing |
| – Spirometry | – Other |
| – Morphometry | |
| – Self-diagnosis | |
| – Bronchoscopy | |

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